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मानक

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IS 7587-5 (2006): Cage Suspension Gear for Winding in Mines, Part 5: Distribution Plates [MED 8: Mining Techniques and Equipment]



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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

खानों में वाईंडिंग के लिए केज सस्पेंशन गियर — विशिष्टि

भाग 5 समकारी प्लेट

(पहला पुनरीक्षण)

Indian Standard

CAGE SUSPENSION GEAR FOR WINDING
IN MINES — SPECIFICATION

PART 5 DISTRIBUTION PLATES

(*First Revision*)

ICS 73.100.40

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (Part 5) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Mining Techniques and Equipment Sectional Committee had been approved by the Mechanical Engineering Division Council.

This standard was first published in 1976. The experience gained in the implementation of the standard has necessitated this revision.

The important changes in this revision are:

- a) Title of this part of standard has been changed as distribution plate in place of equalizing plate as in mining industry; it is termed as distribution plate.
- b) Type B distribution plate is not being used in the industry now. Accordingly, Type B has been deleted and no type has been specified.
- c) Distribution plates for use with bridle chains of 50, 80, 100 and 120 kN capacity only are being used now. Accordingly, distribution plates for use with cage suspension gear of 10, 30 and 150 kN safe working load capacity have been deleted.

Distribution (equalizing) plate is a component of a suspension gear used for winding in mines and is used for connection of bridle chains to the other components of the suspension gear.

This standard is issued in eight parts. The other parts in the series are:

- Part 1 General requirements
- Part 2 Cappelles
- Part 3 Shackles and pins
- Part 4 Bridle chains
- Part 6 Safety detaching hooks (4 plate type) 80 and 100 kN capacity
- Part 7 Safety detaching hooks (4 plate type) 120, 150 and 200 kN capacity
- Part 8 Clivey hook suspension arrangements

The composition of the Committee responsible for the formulation of this standard is given at Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be same as that of the specified value in this standard.

*Indian Standard***CAGE SUSPENSION GEAR FOR WINDING
IN MINES — SPECIFICATION****PART 5 DISTRIBUTION PLATES***(First Revision)***1 SCOPE**

This standard (Part 5) covers the requirements, consistent with safety, for distribution (equalizing) plates used for suspension of cages employed for winding operations in mines.

2 REFERENCES

The following standard contains provisions which through reference in this text, constitute provision of this standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below:

<i>IS No.</i>	<i>Title</i>
7587 (Part 1) : 2004	Cage suspension gear for winding in mines — Specification : Part 1 General requirements (<i>first revision</i>)

3 DIMENSIONS

The dimensions of distribution plate shall be as given in Table 1.

4 MATERIAL

The material used for manufacture of distribution plates shall be as specified in IS 7587 (Part 1).

5 GENERAL REQUIREMENTS

Distribution plates shall conform in all respects to IS 7587 (Part 1).

6 MANUFACTURE

6.1 The distribution plates shall be forged.

6.2 All the holes shall be smoothly bored and sharp corners shall be removed by machining.

7 HEAT TREATMENT

Subsequent to forging or flame cutting and rough machining and prior to final finish all plates shall be subjected to suitable heat treatment to achieve the required mechanical properties.

8 DESIGNATION

A distribution plate having 50 kN safe working load and manufactured from carbon steel (C for 20C15 steel and A for 20Ni2Cr2Mo2 steel) shall be designated as:

Distribution Plate 50 IS 7587 (Part 5)-C

9 PROOF LOAD TEST

Each distribution plate shall be tested with a proof load equal to three times the safe working load (*SWL*) specified in Table 1 and shall satisfactorily withstand the load without any permanent deformation or defect. In addition, the requirements of proof load test given in IS 7587 (Part 1) shall apply.

10 MARKING

10.1 Each distribution plate shall be marked with the manufacturer's identification mark, safe working load and abbreviated name for material [*see 11.1 of IS 7587 (Part 1)*].

10.2 BIS Certification Marking

Each distribution plate may also be marked with the Standard Mark.

10.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which a license for the use of the Standard Mark may be granted to the manufacturers or producers may be obtained from the Bureau of Indian Standards.

Table 1 Dimensions for Distribution Plate
(Clauses 3 and 9)
All dimensions in millimetres.

Technical drawing of a distribution plate. The top view shows a triangular shape with a top hole of diameter $\varnothing X$ and three bottom holes of diameter $\varnothing Y$. Dimensions include R_1 (bottom hole radius), R_2 (top hole radius), a (height from bottom holes to top hole), and b (distance between bottom holes). The side view shows a plate of thickness t with $2 \times 45^\circ$ chamfers at the top and bottom.

Sl No.	SWL of Suspension Gear kN	a	b	R_1	R_2	t	Hole Diameter		Remarks
							$\varnothing X$ H_1	$\varnothing Y$ H_1	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
i)	50	165	76	54	57	38	45	36	Four fall chain
ii)	80	203	127	70	70	51	52	45	Six fall chain
iii)	100	254	152	76	79	57	56	52	Six fall chain
iv)	120	267	155	83	86	65	60	65	Six fall chain

NOTE — Four fall chain, distribution shall have no centre bottom hole.

ANNEX A**(Foreword)****COMMITTEE COMPOSITION****Mining Techniques and Equipment Sectional Committee, ME 08**

<i>Organization</i>	<i>Representative(s)</i>
Directorate General of Mines Safety, Dhanbad	SHRI J. P. KASHYUP (<i>Chairman</i>) SHRI P. K. GANGULY (<i>Alternate</i>)
Bharat Coking Coal Ltd, Dhanbad	SHRI RAMJI SAHAY
Bharat Earth Movers Ltd, Bangalore	SHRI V. PALANISWAMY SHRI T. R. LOGANATHAN (<i>Alternate</i>)
Central Coalfields Ltd, Ranchi	CHIEF GENERAL MANAGER (OPERATIONS) CHIEF GENERAL MANAGER (EQUIPMENT) (<i>Alternate</i>)
Central Mine Planning and Design Institute Ltd, Ranchi	SHRI S. K. CHATTERJI SHRI U. ROY (<i>Alternate</i>)
Central Mining Research Institute, Dhanbad	SHRI A. K. GHOSE SHRI S. K. RITOLIA (<i>Alternate</i>)
Eimco Elecon (India) Ltd, Vallabh Vidyanagar	SHRI A. M. DESHPANDE SHRI RAVINDRA LUTHRA (<i>Alternate</i>)
Gujarat Mineral Development Corporation, Ahmedabad	SHRI S. N. MATHUR
Hindalco Industries Ltd, Dist Sonbhadra	SHRI K. K. PATODIA SHRI ASHOK BAMZAI (<i>Alternate</i>)
Hindustan Copper Ltd, Kolkata	SHRI KAMLESH SINGH SHRI O. P. BHARDWAJ (<i>Alternate</i>)
Hindustan Zinc Ltd, Udaipur	SHRI K. C. JAIN
Kapur Mining Equipment Pvt Ltd, Asansol	SHRI DIPAK KAPUR SHRI TAPAN DUTTA (<i>Alternate</i>)
Mahanadi Coalfields Ltd, Dist Sambalpur	SHRI R. B. UPADHYAY SHRI B. P. PATNAIK (<i>Alternate</i>)
Manganese Ore (India) Ltd, Nagpur	SHRI P. M. REDDY SHRI G. WANGNEO (<i>Alternate</i>)
Mecon Ltd, Ranchi	SHRI H. C. MISHRA SHRI H. K. BHANJDEV (<i>Alternate</i>)
Nanda Millar Co, Kolkata	SHRI J. P. GOENKA SHRI PANKAN GOENKA (<i>Alternate</i>)
National Aluminium Co Ltd, Bhubaneswar	SHRI R. C. PATI SHRI C. M. D. MURTHY (<i>Alternate</i>)
National Mineral Development Corporation, Hyderabad	SHRI A. K. GUPTA SHRI C. V. SURESH (<i>Alternate</i>)
South Eastern Coalfields Ltd, Bilaspur	SHRI KAPIL K. RAI
The Eastern Coalfields Ltd, Sanctoria	SHRI S. C. BASU SHRI D. K. ROY (<i>Alternate</i>)
The Hutti Gold Mines Company Ltd, Dist Raichur	DR M. L. PATIL
The Singareni Collieries Co Ltd, Dist Khammam	SHRI K. RAGHAVENDRA RAO SHRI E. RAJA RAO (<i>Alternate</i>)
The Tata Iron and Steel Co Ltd, Dist Dhanbad	SHRI R. S. SINGH SHRI V. K. SRIVASTAVA (<i>Alternate</i>)

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<i>Organization</i>	<i>Representative(s)</i>
TRF Ltd, Jamshedpur	SHRI S. S. MUKHOPADHAY SHRI N. C. GOSWAMI (<i>Alternate</i>)
Western Coalfields Ltd, Nagpur	SHRI A. K. HALDAR SHRI P. S. RAJU (<i>Alternate</i>)
BIS Directorate General	SHRI C. K. VEDA, Scientist 'F' and Head (MED) [Representing Director General (<i>Ex-officio</i>)]
<i>Member Secretary</i> SHRI T. V. SINGH Scientist 'E' (MED), BIS	

Bureau of Indian Standards

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Amendments Issued Since Publication

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